

Practice Set - Mathematical Physics

IIT-JAM

(2005 To 2020)

| S.No | Topic | Number of Question |
|--------------------------|-----------------------|--------------------|
| Q1 To Q6 | Differential Equation | 6 |
| Q1 To Q7 | Fourier Series | 7 |
| Q1 To Q14 | Matrix | 14 |
| Q1 To Q6 | Complex Number | 6 |
| Q1 To Q3 | Multiple Variable | 3 |
| Q1 To Q2 | Taylor Series | 2 |
| Q1 To Q21 | Vector Analysis | 21 |
| Q1 To Q2 | Limit and Continuity | 2 |
| Q1 To Q4 | Others | 4 |
| Total Number of Question | | 65 |

Practice Set – Mechanics and General Properties of Matter

IIT-JAM

(2005 To 2020)

| S.No | Topic | Number of Question |
|---------------------------------|------------------------------|--------------------|
| Q1 To Q2 | Stability Analysis | 2 |
| Q1 To Q2 | Small Oscillation | 2 |
| Q1 To Q12 | Central Force | 12 |
| Q1 To Q20 | Rigid Body | 20 |
| Q1 | Newton's Law One Dimensional | 1 |
| Q1 To Q8 | Newton's Law Two Dimensional | 8 |
| Q1 To Q6 | Pseudo Force | 6 |
| Total Number of Question | | 41 |

Practice Set – Fluid Mechanics

IIT-JAM

(2005 To 2020)

| Question Number | Topic |
|---------------------------------|---------------------------------|
| Q1 To Q8 | Conservation of Momentum |
| Q1 To Q7 | Fluid Mechanics |
| Total Number of Question | 15 |

Practice Set – Waves and Oscillations

IIT-JAM

(2005 To 2020)

| Question Number | Topic |
|---------------------------------|--------------------------------------|
| Q1 To Q3 | Simple Harmonic Motion |
| Q1 To Q5 | Superposition |
| Q1 To Q7 | Damped and forced oscillation |
| Q1 To Q5 | Wave motion |
| Q1 To Q4 | Doppler effect |
| Total Number of Question | 24 |

Practice Set-Optics and Nuclear Physics

IIT-JAM

(2005 To 2020)

| Question Number | Topic |
|---------------------------------|-------------------------------------|
| Q1 | Fermet's Principle |
| Q1 | Plane Mirror |
| Q1 To Q2 | Spherical Mirror |
| Q1 To Q4 | Refraction |
| Q1 To Q3 | Combination of Lenses |
| Q1 | Superposition Principal |
| Q1 To Q2 | Conditions for maximas and minimas |
| Q1 To Q2 | YDSE |
| Q1 | N-Slit Interference |
| Q1 | Introduction of glass plate in YDSE |
| Q1 | Anti-reflection film |
| Q1 To Q2 | Single Slit Diffraction |
| Q1 To Q2 | Double Slit Diffraction |
| Q1 | Diffraction Grating |
| Q1 | Missing Order |
| Q1 | Resolving Power |
| Q1 To Q3 | Malus Law |
| Q1 To Q2 | Double Refraction |
| Q1 To Q4 | Retarding Plates |
| Q1 To Q5 | Detection of Polarisation |
| Q1 | Spherical Lenses |
| Total Number of Question | 41 |

Practice Set - Electricity and Magnetism

IIT-JAM

(2005 To 2020)

| S.No | Topic | Number of Question |
|---------------------------|--|--------------------|
| Q1 To Q16 | Coulomb's Law, Gauss Law and Electrostatic Potential | 16 |
| Q1 To Q9 | Electrostatic Energy, Conductors and Electric Dipole | 9 |
| Q1 To Q6 | Polarisation and Boundary Condition | 6 |
| Q1 To Q5 | Motion of Charged Particle in Uniform E and B | 5 |
| Q1 To Q8 | Biot Savart Law, Amperes Law and Magnetic Force | 8 |
| Q1 To Q3 | Magnetic Vector Potential, Magnetic Dipole | 3 |
| Q1 | Magnetisation and Boundary Condition | 0 |
| Q1 To Q13 | Maxwell's Equations | 13 |
| Q1 To Q9 | E.M. Waves in Free Space, in dielectrics and in conductors | 9 |
| Q1 To Q3 | Reflection and Transmission at an Interface | 3 |
| Q1 To Q4 | DC Analysis of R-L-C | 4 |
| Q1 To Q4 | AC Analysis of R-L-C | 4 |
| Total Number of Questions | | 80 |

Practice Set - Thermodynamics and Statistical Mechanics

IIT-JAM

(2005 To 2020)

| Question Number | Topic |
|--------------------------|--|
| Q1 To Q19 | Kinetic Theory of Gases |
| Q1 To Q8 | First Law of Thermodynamics |
| Q1 To Q15 | Second Law of Thermodynamics |
| Q1 To Q5 | Thermodynamics Relations and Potential |
| Q1 To Q6 | Phase Transition |
| Q1 To Q7 | Identical Particle |
| Q1 To Q7 | Blackbody Radiation |
| Q1 | Maxwell Boltzmann |
| Total Number of Question | 68 |

Practice Set –Nuclear Physics

IIT-JAM

(2005 To 2020)

| Question Number | Topic |
|----------------------------------|------------------------------|
| Q1 | Nuclear Radius |
| Q2 To Q3 | Uncertainty Principle |
| Q1 To Q2 | Binding Energy |
| Q1 To Q7 | Radioactivity |
| Q1 | Nuclear Fusion |
| Total Number of Questions | 14 |

Practice Set – Modern Physics

IIT-JAM

(2005 To 2020)

| Question Number | Topic |
|---------------------------------|---------------------------------|
| Q1 To Q12 | Particle Nature of Wave |
| Q1 To Q9 | Wave Nature of Particle |
| Q1 To Q4 | Hydrogen Atom |
| Q1 To Q3 | Postulates of Quantum Mechanics |
| Q1 To Q4 | Free Particle |
| Q1 To Q7 | Particle in Box |
| Q1 To Q3 | Harmonic Oscillator |
| Q1 To Q6 | 2D and 3D System |
| Q1 To Q13 | STR |
| Total Number of Question | 61 |

Practice Set – Electronics and Experimental Method

IIT-JAM

(2005 To 2020)

| Question Number | Topic |
|---------------------------------|--|
| Q1 | Network Analysis |
| Q2 To Q3 | Semiconductor Physics |
| Q1 To Q5 | Basics of pn junction diode and DC Analysis |
| Q1 To Q4 | Rectifier and Clipper Circuit, Clipper Circuit |
| Q1 To Q3 | Zener Diode, other diode |
| Q1 To Q9 | Basics of Transistors and DC and AC Analysis |
| Q1 To Q8 | Basics of Operational Amplifier |
| Q1 | Op-Amp Integrator, Differentiator, Rectifier |
| Q1 | Op-Amp Comparator, Filter, Oscillator |
| Q1 To Q9 | Number System and Boolean Functions |
| Q1 To Q10 | Combinational Circuits |
| Total Number of Question | 54 |

Practice Set – Solid State Physics

IIT-JAM

(2005 To 2020)

| Question Number | Topic |
|---------------------------------|---|
| Q1 To Q14 | Crystal structure and Bravais Lattice |
| Q1 To Q10 | X-ray diffraction and Reciprocal Lattices |
| Q1 To Q5 | Free Electron Theory |
| Q1 | Band Theory |
| Q1 To Q2 | Magnetism |
| Total Number of Question | 32 |